

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A semiconductor device structure formed on a substrate defining a substantially horizontal plane, the semiconductor device structure comprising:
 - a source region;
 - a drain region;
 - a gate electrode disposed on the substrate ~~and electrically insulated from the substrate~~, said gate electrode positioned vertically between said source region and said drain region; and
 - a plurality of semiconducting nanotubes, each of said semiconducting nanotubes including a first end electrically coupled with said source region, a second end electrically coupled with said drain region, and a channel region extending vertically through said gate electrode between said source region and said drain region, said channel region being electrically insulated from said gate electrode, and said gate electrode configured to receive a control voltage effective to regulate current flow through said channel region ~~of each of said semiconducting nanotubes~~ between said source region and said drain region.
2. (Previously Presented) The semiconductor device structure of claim 1 wherein said source is composed of a catalyst material effective for growing said semiconducting nanotubes.
3. (Previously Presented) The semiconductor device structure of claim 1 wherein said drain is composed of a catalyst material effective for growing said semiconducting nanotubes.
4. (Previously Presented) The semiconductor device structure of claim 1 further comprising:
 - an insulating layer disposed between said drain and said gate electrode for electrically isolating said drain from said gate electrode.

5. (Previously Presented) The semiconductor device structure of claim 1 further comprising:
an insulating layer disposed between said source and said gate electrode for electrically isolating said source from said gate electrode.

6. (Previously Presented) The semiconductor device structure of claim 1 wherein said semiconducting nanotubes are composed of arranged carbon atoms.

7. (Cancelled)

8. (Previously Presented) The semiconductor device structure of claim 1 wherein said nanotubes are oriented substantially perpendicular to said horizontal plane.

9-24. (Cancelled)

25. (Currently Amended) A semiconductor device structure formed on a substrate, the semiconductor device structure comprising:

an electrically-conductive first plate on the substrate;

an electrically-conductive second plate disposed vertically above said first plate;

an electrically-conductive layer disposed between said first and second plates;

a plurality of nanotubes, each of said nanotubes having a first end electrically coupled with said first plate for increasing an effective area of said first plate and a second end, and each of said nanotubes extending vertically through said electrically-conductive layer from said ~~first end to said second end~~ first plate toward said second plate; and

a plurality of dielectric layers, ~~wherein each of said nanotubes is electrically isolated from said electrically-conductive layer by of a respective one of said dielectric layers~~ each of said plurality of dielectric layers having a first portion disposed between one of said nanotubes and said electrically-conductive layer, and is electrically isolated from said second plate by a second portion of the respective one of said dielectric layers disposed between one of said nanotubes and said second plate.

26. (Previously Presented) The semiconductor device structure of claim 25 wherein said nanotubes have a conducting molecular structure.

27. (Previously Presented) The semiconductor device structure of claim 25 wherein said nanotubes have a semiconducting molecular structure.

28. (Currently Amended) The semiconductor device structure of claim 25 wherein each of said dielectric layers comprises a shell that encases a respective one of said nanotubes ~~with the proviso that said first end that is electrically coupled with said first plate.~~

29-33. (Cancelled)

34. (Currently Amended) The semiconductor device structure of claim 25 further comprising:
a plurality of gate dielectric layers, ~~said channel region of each of said semiconducting nanotubes electrically isolated from said gate electrode by~~ a respective one of said gate dielectric layers disposed between said channel region of one of said semiconducting nanotubes and said gate electrode.